



BLACK & VEATCH

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Big Ox Energy
2620 Development Drive
Green Bay, WI 54311

B&V Project 194386
B&V File 40.0510

Attention: Mr. Jason Osbahr, Director of Research and Development

Subject: South Sioux City, NE Pretreatment Facility Process Evaluation

Black & Veatch has been retained by Big Ox Energy (BOE) to conduct evaluations and provide a report that examines and defines the rated capacity of their pretreatment system for the South Sioux City pretreatment facility. The work will be divided into two sections. The first section will evaluate the digester dewatering system to define its loading criteria and performance. Recent improvements have been made to the dewatering system by BOE. Past performance and future performance will be examined. The dewatering system is internal to BOE operation and processes digester effluent and float from the GEM unit.

The second section of work will focus of the GEM system and the feed streams to the GEM unit. The GEM receives feed flow from the BOE dewatering system and flow from two industries upstream of the BOE facility. A third industrial facility has shut down and that site may be taken over by a new owner and resume discharge to BOE in the future. The two industrial streams and the centrate from internal solids dewatering are combined and comprise the feed to the GEM unit. The GEM underflow is discharged to the City of Sioux City, Iowa and is subject to the City's industrial pretreatment permit and rules. The GEM float is sent back to digestion. The capacity of the GEM system will be examined and defined.

Black & Veatch will provide a full wastewater process evaluation based on the two-section evaluation described above and the scope of work will include the following:

- Define the capability, design loadings and operation of pre-treatment equipment
- Characterization of process performance (influent loadings vs discharge quality)
- Review of operator and training requirements
- Confirmation that a State Certified Wastewater Operator supervises the operation of the Pretreatment system and all operators have appropriate training documented
- Review detail drawings of the sampling pit and field verify sampler location to determine that samples collected from this location are representative of the waste being discharged

Black & Veatch is working on this process and operations evaluation, however, due to the nature of the detailed request and the scope of work required for the evaluations, Black & Veatch will require 4 weeks from today's date to complete the work and prepare the report.



If you have any questions, please do not hesitate to contact me at (913) 458-3597 or
SchultzeME@bv.com.

Very truly yours,

BLACK & VEATCH CORPORATION

A handwritten signature in blue ink that reads "Matthew E. Schultze". The signature is fluid and cursive, with the first name "Matthew" being the most prominent part.

Matthew E. Schultze
Project Manager

CC: Mr. Paul Glatkowski, BOE
Mr. Chuck Pike, B&V